WIRE GLASS

IT'S USES AND APPLICATION

AS A

FIRE RETARDENT

MADE BY THE

MISSISSIPPI GLASS COMPANY

ST. LOUIS

NEW YORK CHICAGO

SOLE MANUFACTURERS OF WIRE GLASS FOR THE

American Wire Glass Mfg. Co.

1896

FRANKLIN INSTITUTE

PHILADELPHIA

WIRE GLASS

MADE BY THE IMPROVED PROCESS
NOW IN USE BY THE
MISSISSIPPI GLASS COMPANY
IS RECOMMENDED BY THE

BOARDS OF FIRE UNDERWRITERS

.. OF ..

NEW YORK,

BOSTON, PHILADELPHIA,

AND OTHER CITIES FOR

Skylights,
Lights in Fire-Proof Elevator Shafts,
Lights in Fire-Proof Doors,
Lights in Cellar Windows,
Lights in Fire-Escape Windows,
AND AS Lights Instead of Fire Shutters.

FOR SALE BY ALL THE

LEADING JOBBERS IN GLASS

IN THE

UNITED STATES.

EDWARD WALSH, JR., Prest.
St. Louis.

E. W. HUMPHREYS, Vice Prest.
New York.

INTRODUCTORY.

We take pleasure in issuing this pamphlet describing the various merits of WIRE GLASS, especially as we are enabled to say that the improved method of manufacture now in use by the MISSISSIPPI GLASS COMPANY produces a commercial article greatly superior to that made by the original process.

Our WIRE GLASS will now be found fully equal for high quality to our well known general line of ROUGH and RIBBED GLASS for sky-lights of which we supply two-thirds of the quantity used in the United States.

The new *role* in which WIRE GLASS is here presented will commend itself to the public as a valuable addition to fire retarding building materials.

We call special attention to the fact that the BOARDS of FIRE INSURANCE UNDERWRITERS in the large cities, before whom tests have been made, demonstrating the fire resisting qualities of WIRE GLASS made by us, *have placed it on the list of fire retarding materials, equal, if not superior to Iron and metal covered wood.*

Samples of WIRE GLASS made by the MISSISSIPPI GLASS COMPANY can be had of any Leading Jobber in Glass in the United States, or by applying to any of our offices.

Yours truly,

MISSISSIPPI GLASS COMPANY,

GENERAL OFFICES AND WORKS:
Main and Angelica Streets,
ST. LOUIS, MO.

NEW YORK OFFICE:
90 West Broadway,
C. S. KING, Agent.

CHICAGO OFFICE:
1443 Monadnock Building,
C. J. GUNDLACH, Agent.

From Photograph of Wire Glass showing full size of Wire Web.

The Illustration on the opposite page shows the appearance of Wire Glass and of the effect of the fine wire which is embedded midway between the surfaces of the glass.

Wire Glass is either Ribbed or Rough Rolled Glass, having wire netting embedded in its centre during the process of manufacture.

The temperature at which the wire is embedded in the molten glass ensures cohesion between the metallic netting and the glass; so firmly does the glass adhere to the wire, that, if broken by shock, by fire, or from other causes, it remains practically intact.

Skylight glass wired in this manner possesses the combined strength of the wire netting and the glass plate, and the wire being thoroughly covered, is protected from rust or corrosion.

WIRE GLASS

For Skylights.

Wire Glass made by the new and improved process, makes the very best skylights known, and is strongly recommended for the following reasons.

That having a fine wire embedded midway between its surfaces, the glass will not drop out when by any accident the glass is broken.

Wire Glass requires no under netting as protection from falling fragments. Plain Glass may break, it falls down and must be replaced. Wire Glass never breaks, may crack, cannot fall down, and need not necessarily be replaced.

The perils incident to the use of heavy glass in skylights are avoided by the adoption of Wire Glass, the cost and weight of the frames are correspondingly reduced, and the use of under netting entirely obviated.

It is also practically FIRE PROOF, BURGLAR PROOF and STONE PROOF, and withal is easier cleaned than when netting is used.

See Illustration and Description, Pages 6 and 7.

Wire Glass

In Fire Escape Windows.

Windows contiguous to Fire Escape Ladders should be glazed with Wire Glass, for it has frequently happened that the flames and smoke emanating from the burning buildings through these windows have prevented egress by the Fire Escape.

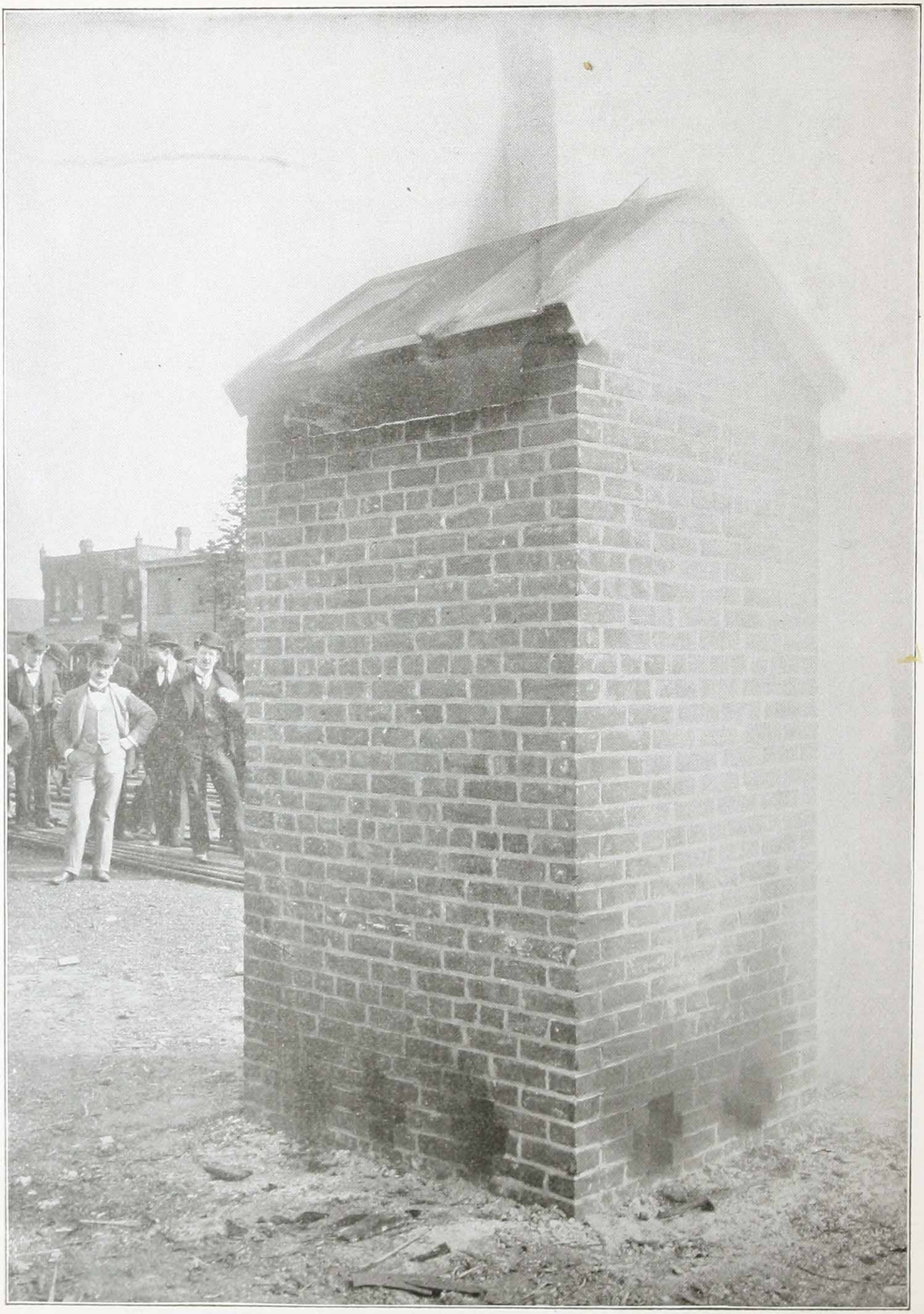
The windows thus glazed will confine the smoke and flames within the building, rendering the Fire Escape available at all times.

A view to show the Wire Glass Skylights were intact, after having been subjected to the severest test of fire and water any building can give for 40 minutes. An idea can be had of the severity of this test by noting the cracks in the wall, which were caused by the excessive heat. See opposite page.

The Illustration on opposite page is from a photograph of a test of the fire resisting qualities of Wire Glass, under the supervision of Secretary Charles A. Hexamer, and Inspector William McDevitt of the Philadelphia Fire Underwriters' Association, April 30, 1896.

The Photograph shows the Wire Glass skylight in a brick test house, that had been built especially for the purpose of testing the fire retarding qualities of Wire Glass. It was three feet by four feet inside measurement, and nine feet high. Iron grate bars were placed at the bottom of the house, and openings left in the side walls near the ground for the purpose of draught, the structure was piled for two-thirds of its height with wood treated with a liberal allowance of oil and rosin, the fire was started and burned with great severity for 40 minutes, when water from a fire hose was played upon it, with, as the photograph shows, no other effect than to crack the glass into atoms, yet the lights retained their original form, demonstrating beyond all question the fire retarding qualities of Wire Glass.

An idea can be had of the severity of this test by noting the cracks in the wall, which were caused by the excessive heat.



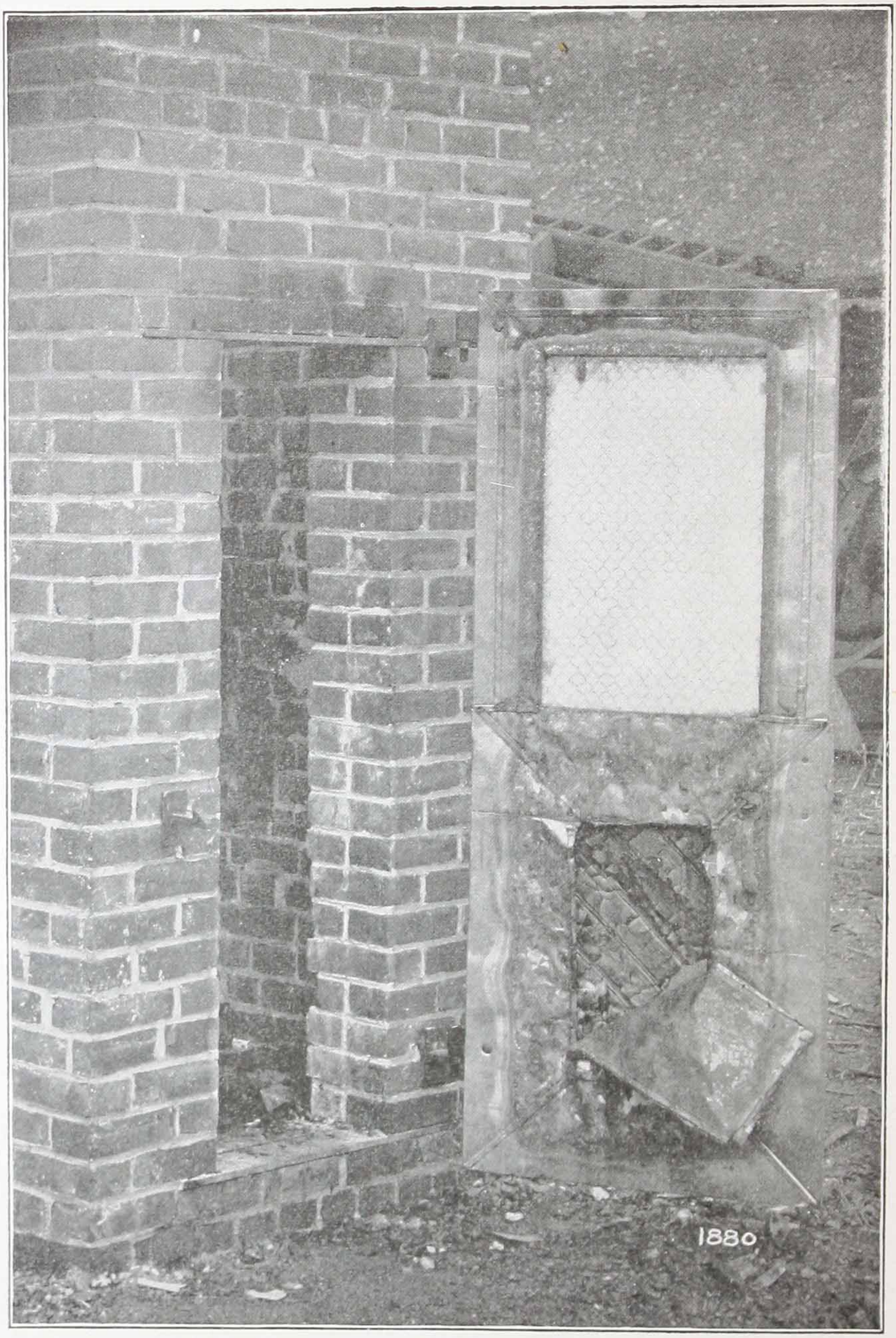
For description see opposite page.

The Illustration on opposite page is taken from a photograph showing another view of the test house illustrated on pages 10 and 14.

The photograph shows one side of the shaft that had a skylight glazed with 1-4 inch Rough Glass which was of the same thickness as the Wire Glass used in skylight on the opposite side. This view was taken five minutes after the fire was lighted, and shows all three of the lights made of 1-4 inch Rough Glass to have broken and fallen in.

On page 10 is seen an illustration of the skylight on the opposite side of the shaft, but being made of Wire Glass it stood the severe test of fire and water as there described, retaining as is there seen its original form complete.

The two illustrations demonstrate beyond all question the superior merits of Wire Glass.



A photograph taken after water from a hose had been thrown on the glass. It also shows a panel of the fire proof door ripped open, exposing the charred wood inside the metal covering.

The Illustration on page 14 is from a series of photographs taken of the test described on page 11 and shows the metal covered fire proof door and Wire Glass light after they had been subjected to the severe test of fire and water previously described.

The photograph shows the Wire Glass intact, though it can be seen on close examination to be cracked into myriads of atoms, yet there is not even a small hole or crack large enough to let the smoke through.

The camera tells a story that needs but to be made generally known to make Wire Glass universally adopted not only for light, but for protection against fire where light and protection are needed.

The panel of the fire proof door is shown in the illustration ripped open, exposing the charred wood inside and thereby giving an idea of the intense heat to which the Wire Glass had been subjected.

Ruins of the two factories of the Central Stamping Company, Newark, N. J. For description see opposite page.

The illustration on page 16 is from a photograph showing the ruins of two factories of the Centrai Stamping Co., New Jersey Railroad Avenue, Newark, N. J., one being a five story factory and the other a one story factory, with a 4 foot, 8 inch alley dividing them. The one story factory had eight windows of Wire Glass in place of fire shutters. The fire occurred in the five story factory, and the window seen in the photograph shows how well the Wire Glass withstood the intense heat. The wall and the smoke-stacks of the large factory fell and demolished the smaller building, but left a portion of the wall standing, also the window, as seen in the photograph.

The frames of these windows were made of angle iron and swing on a pivot, which any iron worker can make. For description of these frames see page 19.

Wire Glass

Instead of Fire Shutters.

One of the vital problems that confronts the Architects of all large buildings is, how to protect the structure they erect from the ravages of fire, yet at the same time to give light and air without marring the general appearance or causing too large an expenditure, and until now they have been forced to use in all extra exposed parts of the building, fire shutters, which have never been wholly satisfactory, for the reason that when the shutters are closed, the watchman cannot see the flicker of the flame should a fire occur in the building, therefore, the fire has to make considerable headway before it is detected, also it oft happens the janitor forgets to close the shutters, whereby a risk is made extra hazardous by reason of forgetfulness, withal the shutters oft rust and get out of repair, causing continued expense. The Boards of Underwriters recognizing these facts, and appreciating Wire Glass as a fire retardent, allow the use of Wire Glass in suitable frames instead of fire shutters, but in accord with their rules, each individual case must be accepted on its own merit.

By the use of Wire Glass instead of fire shutters, there is not only a free transmission of light all the time, but also a saving of expense.

The flicker of the flame can be seen through the window at all times, should a fire occur, whereby an early alarm is given and much damage to the property saved.

As there are no shutters to close, the safety of the building is not jeopardized through the watchman's negligence.

See Illustration and Description, Pages 16 and 17.

Suitable Frames for Wire Glass When Used Instead of Fire Shutters.

The following specification of angle iron frames gives the exact dimensions of the iron frames used in factory as shown in illustration on page 16.

Outer Frame 3 1-2 in. x 3-8 in.
Angle Iron Frame to hold glass of 1 1-2 in. x 1 1-2 in. angle.
Angle Iron to hold glass in frame of 1 in. x 1 in. angle.
Upright Stops of 1 in. x 1 in. angle iron.
Anchored in place by 2 in. x 1-2 in. anchors.
Pivots 3-4 in. round at centre of top and bottom.

Should there be no ventilation required, then tin covered wood frames could be used to good advantage.

Hollow iron frames can be made of No. 24 galvanized sheet iron formed to a hollow molded form having grooves and rabets to receive Wire Glass, the joints of frame so arranged that a perfect lock is acquired and the frame will not disintegrate in case of fire, but will sustain the glass and render the window capable of resisting fire. Solder may be used for the purpose of filling the joint, but not to hold the parts of the frame together, as the frame must remain intact after the solder is melted away. Opening sashes conforming to the same principle to be applied, whether pivoted to the sides or the bottom and top of frame or hinged as a door.

The comparative cost of angle iron frames with Wire Glass windows, and ordinary windows with iron or metal covered wood shutters, is about the same.

If hollow iron frames are used the cost is considerably less.

Wire Glass

In Cellar Windows.

When used in cellar windows, saves the expense of outside bars or rods, which make an unsightly view as they accumulate dirt, papers and refuse, withal it affords greater protection against burglars and sneak thieves who would have the greatest trouble to break through the Wire Glass windows.

Wire Glass

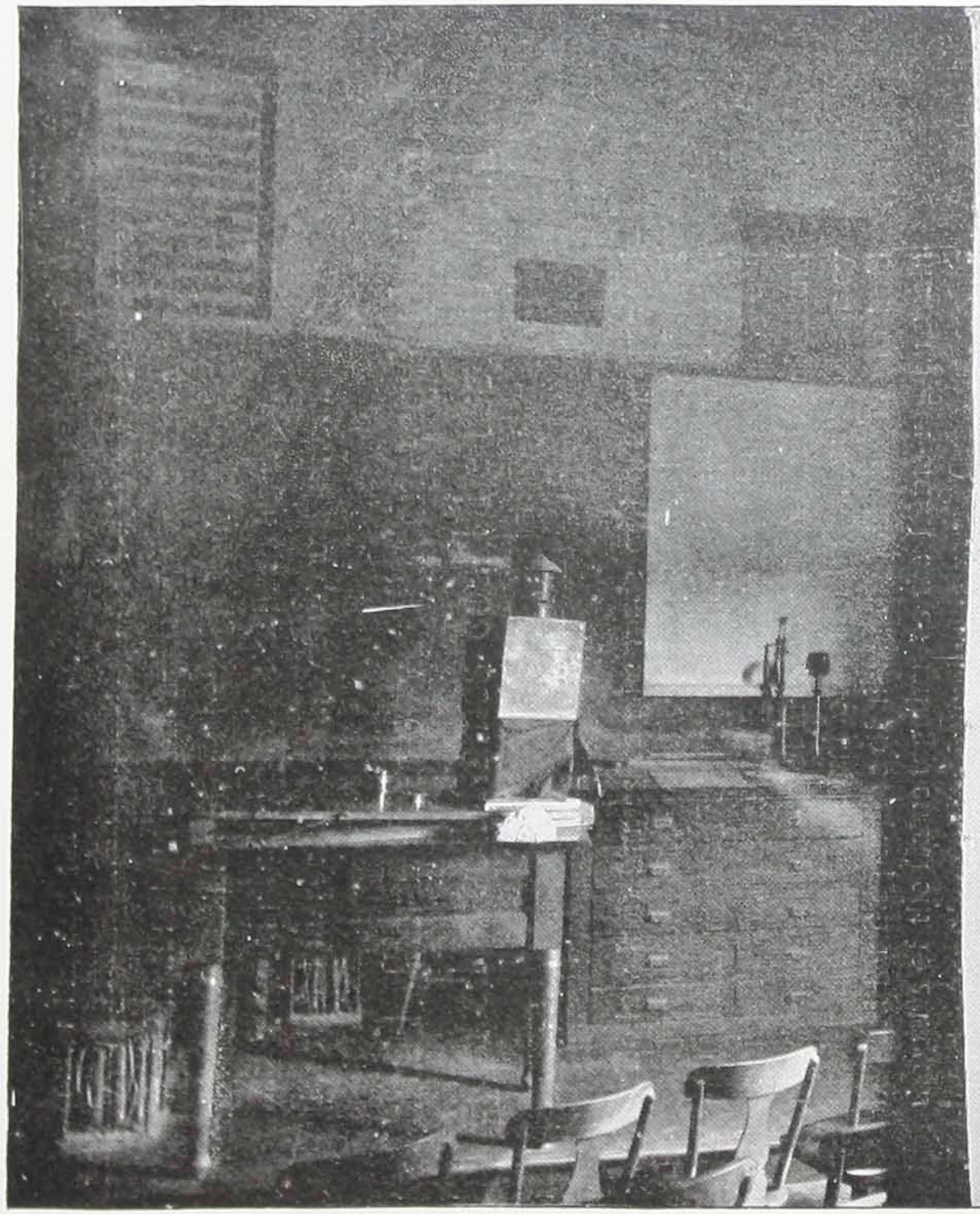
In Fire Proof Elevator Wells.

A large percentage of the great fires that occur can be traced to the fire reaching the elevator wells, and through them communicating the flames to the various floors.

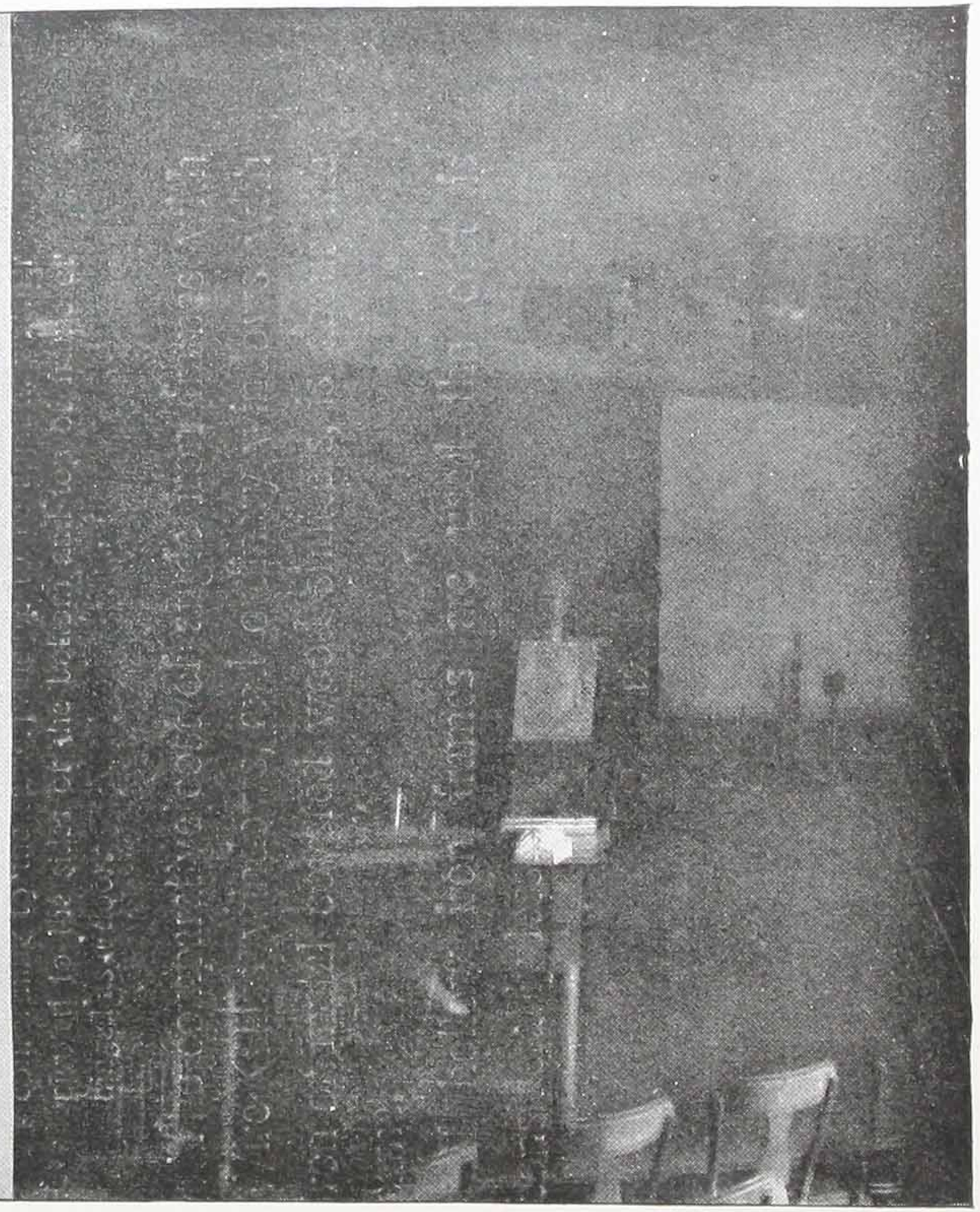
For this reason the Boards of Underwriters have urged the building of brick or tile lined wells, but owing to the fact that glass was not allowed to be used, they were not desirable where passengers were to be carried.

The Boards now admit Wire Glass in these wells, and also advise its use in place of grill work.

By recent rulings of the Boards, buildings having elevator wells with open grill work, can be brought under a lower insurance rate, by enclosing the well in metal covered wood, and using Wire Glass in doors and panels.



Photograph of room taken when the windows were glazed with Ribbed Glass.



Photograph of room taken when the windows were glazed with plain window glass.

For description see opposite page.

Diffusion of Light.

In answer to many questions respecting the advantages or disadvantages of using Ribbed Glass in place of plain glass in factory windows, or in buildings where it is necessary to have all the light possible, attention is called to the two illustrations of same room on page 22, which are taken from photographs supplied by Charles L. Norton, Esq., Massachusetts Institute of Technology, who conducted a number of experiments with a view of determining beyond question, whether ribbed or plain window glass distributed the most light.

The illustrations on page 22 show two photographs of the same scene, one taken when the windows were glazed with ribbed glass, the other when they were glazed with plain window glass. These windows were so arranged that one kind of glass could be quickly substituted for the other, so that each kind of glass could be subjected to the same amount of light within a few seconds of each other, and the report of Mr. Norton and photograph are equally emphatic in favor of ribbed glass over plain window glass, the camera solving the problem.

The Ribbed Glass used in these experiments was manufactured by the Mississippi Glass Co. and is known as 1-8 inch Rolled Ribbed Glass, samples of which can be had of the leading jobbers in glass in the United States.

Wire Ribbed Glass can be made to order.

REMARKS.

As the Boards of Underwriters, Fire, and Building Departments in the different cities cannot make a ruling that should cover each and every case where it is desirable that Wire Glass be used in place of Iron or Metal Covered Wood, the Architects, Contractors, and Builders must make special application in each instance, for each case must be individually examined and accepted or rejected on its own merits.

.....As there are inferior brands
of Wire Glass on the market,
be particular to specify

Wire Glass Made by the Mississippi Glass Co.

All leading jobbers carry our glass in stock.

FRANK F. LISIECKI, PRINTER, 298 BROADWAY, NEW YORK